GERMAK, Jozef

TECHNOLOGY

Periodicals: ENERGETIKA Vol. 9, no. 2, Feb. 1959.

GERMAK, J., Comparison of parameters of barrel boilers. p. 64.

Monthly List of East European Accessions (EEAI) LC Vol. 8, No. 5, May 1959, Unclass.

CERMAK, Jaroslav

T

Country : CZECHOSLOVAKIA
Category: Human and Animal Physiology. Physiology of Labor and Sport.

Abs Jour: RZhBiol., N 19, 1958, 89297

Author : ~~Cermak, J.;~~ Eiselt, E.
Inst : ~~Katedra~~ Tylovychovneho lekarstvi lekarske fakulty univ.*
Title : The Changes of the Dynamics of the Heart in Dancers Following the Workout and Under Working Conditions, Determined with the Aid of a Rheoplethysmograph.

Orig Pub: Casop. lekaru ceskych, 1957, 96, No. 37, 1168-1174

Abstract: In twenty professional dancers (10 men and 10 women, average age 23 years) the pulse frequency (P), the systolic volume (SV) and the minute volume (MV) were investigated during and after work with

*Karlovy v Praze prednosta prof. Jiri Kral.

Card : 1/3

T

Country : CZECHOSLOVAKIA
Category: Human and Animal Physiology. Physiology of Labor and Sport.

Abs Jour: RZhBiol., N 19, 1958, 89297

the aid of a rheoplethysmograph. Following small exertion, all indixes increased; P returned to the original value within 2-3 minutes, and SV and MV within 5-7 minutes; consequently all indixes fell below the rest values. The MV indixes at rest, but measured under the working conditions, were higher than those obtained in the laboratory, this elevation being caused by an increase of SV. At the time of the work load (dance) MV increased either on account of P, or SV, or on account of both indixes. Only in one case with clinical and subjective evidence of overtraining was observed a decrease of all the investigated values. Two

Card : 2/3

Country : CZECHOSLOVAKIA
Category: Human and Animal Physiology. Physiology of Labor and Sport.

T

Abs Jour: RZhBiol., No 19, 1958, 89297

types of reactions were noted after a six minute dance: 1) maximal shifts of P, SV, and MV immediately after exertion with a following decrease; 2) with maximal increase of P and MV - low values of SV, equalling almost the original value; in the course of the first minute of respiration, elevation of SV took place (apparently due to lengthening of the diastole, caused by rapid restoration of P). -- V.V Rozenblat.

Card : 3/3

CERMAK, Jaroslav, inz.

Impressive activity of the Czechoslovak Scientific Technological Society at the 1963 Brno International Fair. Tech praca 15 no.11:919-920 N'63.

1. Ustredni rada Ceskoslovenske vedecko-technicke spolecnosti.

CERMAK, Jaroslav, inz.

Program of the Czechoslovak Scientific Technological Society for the 6th Brno International Fair 1964. Tech praca 16 no. 4:300-302 Ap '64.

1. Deputy Secretary for Organization, Central Council of the Czechoslovak Scientific Technological Society.

CERMAK, Josef

A simple method for registration of the curvature and mobility of the spine. Acta chir. orthop. trauma. cech. 29 no.3:269-273 Je '62.

1. Institut telesne vychovy a sportu, fakulta University Karlovy v Praze.

(SPINE)

CERMAK, Jaroslav, MUDr

Medical control of physical education and sports, its organization and tasks. Prakt.lek., Praha 35 no.8:173-177 20 Apr 55.

1. Katedra telesne vychovy a telovychovneho lekarstvi LFKU v Praze, prednosta prof. MUDr. J.Kral.

(PHYSICAL EDUCATION AND TRAINING, in Czech., med. control)
(ATHLETICS, in Czech, med. control)

CERMAK, JIRI

Distr: 4E2c(j)/4E3b/4E3d 7

Active alloys for the direct synthesis of methylchlorosilanes. Jaroslav Žižka, Jiří Čermák, and Václav Mazoch. Czech. 87,036, Sept. 15, 1957. The process of allowing alloys of Si, Cu, and Al to temper in an oven for 6–12 hrs. above the eutectic temp. (800–1100°) and 6–10 hrs. at a sub-eutectic temp. (600–800°) gives products that bring about a higher conversion of Si (80–90%), a greater yield of higher methylated chlorosilanes, and a better reproducibility of the process. Fuse in a C crucible 42.75 kg. Si (99% Si) for 3 hrs. and 20 min. at 1470° in a gas-heated oven, add 7 kg. cathode Cu in blocks and, after the Cu has melted (approx. 15 min.), add 0.25 kg. Al in sheets. Mix the contents with a rod. After 2 min. transfer the molten mass to another prewarmed C crucible, keep for 6 hrs. at 870° and for another 6 hrs. at 700°, and then allow to cool gradually for 6–10 hrs. In another example the Si:Cu ratio is 85.5:14 and the alloy is tempered for 10 hrs. at 1000° and then allowed to cool slowly for 12 hrs. L. J. Urbánek

CERMAK, JIRI

CZECHOSLOVAKIA / Organic Chemistry. Synthetic Organic Chemistry. G

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 61024.

Author : Miroslav Sasin, Jiri Cermak.
Inst : -
Title : Synthesis of Triphenylpentamethylcyclotetrasiloxane.

Orig Pub: Chem. listy, 1957, 51, No 9, 1766-1767.

Abstract: Triphenylpentamethylcyclotetrasiloxane (III) was separated from products of methylphenyldiethoxysilane (I) and dimethyldichlorosilane (II) co-hydrolysis. 1 liter of water is added drop by drop to 3 moles of I and 1 mole of II in 500 ml of toluene,

Card 1/2

CZECHOSLOVAKIA / Organic Chemistry. Synthetic Organic Chemistry. G

Abs Jour: Ref Zhur-Khimiya, No 18, 1958, 61024.

Abstract: and 30% of III is separated, boiling point 150°/0.05 mm, melting point -36°, $n^{25}D = 1.51134$, $d_{25}^{25} = 1.0805$.

Card 2/2

CERMAK J

Distr: 4E2c(j)/4E3d

Recovering methyl chloride in the direct synthesis of methylchlorosilanes. Jaroslav Zítka and Jiří Čermák, Czech. 89,396, Apr. 15, 1959. When a gaseous mixt. of CH_4, H, C_2H_6, and methylchlorosilanes is passed over active C, MeCl is absorbed quant., whereas the other components pass unabsorbed. L. J. Urbánek

CERMAK, J.

A conference on the organic siliceous compounds in Leningrad. P. 87

CHEMICKE PRUMYSI. (Ministerstvo chemickeho prumyslu) Praha, Czechoslovakia
Vol. 9, No. 2, Feb. 1959

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 7, July 1959
Uncl.

CERMAK, J.; DOSTAL, P.

Polarographic determination of the Si-H combination in presence of Si-Si in polyorganosiloxanes. Coll Cz Chem 28 no.6:1384-1390 Je '63.

1. Forschungsinstitut fur organische Synthesen, Pardubice Rybitvi.

CERMAK, J., inz.

"Labotron; an electronic laboratory" by Giancarlo Contessi. Reviewed by J. Cermak. Slaboproudy obzor:Suppl.: Literatura 24 no.4:L29 '63.

CERMAK, Jan

Monochromatization of X rays. Cs cas fys 13 no.3:219-240 '63.

1. Ustav fyziky pevnych latek, Ceskoslovenska akademie ved, Praha.

CERMAK, Jindrich, inz. CSc.

Calculation of the transmission properties of low-frequency cable lines for high frequency and pulse transmissions. Slaboproudy obzor 25 no.3:139-144 Mr '64.

1. Research Institute of Telecommunications, Prague.

ACCESSION NR: AP4044597 Z/0055/64/014/008/0629/0645

AUTHOR: Cermak, J.

TITLE: Chromatic focusing of x-ray diffraction lines and an achromatic camera

SOURCE: Chekhoslovatskiy fizicheskiy zhurnal, v. 14, no. 8, 1964, 629-645, 6561

TOPIC TAGS: x-ray diffraction, achromatic camera, chromatic focusing, x ray spectroscopy, diffraction line

ABSTRACT: Conditions for simultaneous suppression of the wavelength component (broadening) and the instrumental component (broadening) of x-ray diffraction lines are analyzed. General expressions were derived for wavelength and instrumental broadening caused by not adhering to chromatic focusing conditions (also geometric focusing conditions) in any experimental geometry, assuming the use of a Johann or Johansson monochromator and measurements of diffraction lines on the same side of the specimen as in the incident beam (reflection geometry). The conditions for chromatic and geometric focusing were ob-

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ACCESSION NR: AP4044597

tained as special cases of the derived expressions. It was found that conditions for perfect geometric and chromatic focusing of the diffraction line can be met readily. General considerations and computations for a given experimental setup are described. Several rules are suggested for optimum choice of the parameters for simultaneous focusing of a pair of lines. An achromatic camera which is suitable for this sort of measurement is described. The profile of a line with $\theta = 74.3$ degrees (the 331 line of annealed aluminum) obtained with an achromatic arrangement and that obtained by means of an ordinary back-reflection were compared and the advantages of the former (especially in view of the fact that no elaborate experimental equipment was required) were made evident by photometric records. Orig. art. has: 5 figures, 10 formulas, and 1 table.

ASSOCIATION: Institute of Solid State Physics, Czech. Acad. Sci., Prague

SUBMITTED: 30Dec63 ENCL: 00

SUB CODE: OP NO REF SOV: 000 OTHER: 000

Card 2/2

PROCHAZKA, J., prof. dr.; BRZEK, V.; CERMAK, J.; ENDRYS, J.; HUDLER, L.; JEDLICKA, J.; JURIN, I.; REJSEK, L.

Experiences with the surgical treatment of acquired aortic stenosis. Rozhl. chir. 44 no.1:1-7 Ja '65.

1. II. chirurgicka klinika lekarske fakulty Karlovy University v Hradci Kralove (prednosta: prof. dr. J. Prochazka).

CERMAK, J.; TUMA, S.; ZAPLETAL, A.

Volume of the heart and its relation to the height, weight and body composition in obese boys. Cesk. pediat. 20 no.10: 867-872 O '65.

1. Vyzkumny ustav telovychovny v Praze (prednosta doc. dr. E. Eiselt, CSc.) a II. detska klinika fakulty detskeho lekarstvi Karlovy University v Praze (prednosta prof. dr. J. Houstek, DrSc.).

ČERMÁK, J.

CZECHOSLOVAKIA / Laboratory Equipment Instruments, F
Their Theory, Construction, Application.

Abs Jour: Ref Zhur-Khimiya, No 19, 1958, 64287

Author : Cermak Jan
Inst : Not given
Title : An Instrument for the Analysis of Component $K\alpha_1,\alpha_2$ Doublets on a Diffraction Roentgenogram.

Orig Pub: Ceskosl. casop. fys., 1957, 7, No 6, 732-739

Abstract: Describes the potentiometer method of separating the $K\alpha_1$ and $K\alpha_2$ components of photometric-curve roentgen-diffraction pictures obtained, for example, by means of G-M counters. The operating principle is realized in a simple instrument that permits separating the component doublet $K\alpha_1$ from the curve through selecting resistances

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CZECHOSLOVAKIA / Laboratory Equipment Instruments, Their Theory, Construction, Application. F

Abs Jour: Ref Zhur-Khimiya, No 19, 1958, 64287

Abstract: proportional to the first numbers of the equation $\phi(x)$, which characterizes the curve $K\alpha_1$. An evaluation is given of a series of factors that influence the accuracy of the method: errors in determining the relation of the intensities of the separated componenets, inaccurate determination of the background, disregard of the lines $K\alpha_3$ and $K\alpha_4$, and others.

Card 2/2

CZECHOSLOVAKIA/Solid State Physics - Structural Crystallography E-4

Abs Jour : Ref Zhur - Fizika, No 1, 1959, No 824

Author : Cermak Jan
Inst : Not Given
Title : Instrument for the Expansion of the Resolution of the Components $K\alpha_1$, $K\alpha_2$ of the Doublet on X-ray Diffraction Photographs.

Orig Pub : Chekhosl. fiz. zh., 1957, 7, No 6, 748-756

Abstract : The profiles of the $K\alpha_1$ and $K\alpha_2$ curves is assumed to be the same. The ratio of intensities of $K\alpha_2$ and $K\alpha_1$ is assumed constant and equal to 0.5. Starting with these basic premises, the author obtained for the shape of $K\alpha_1$ line an analytic expression in the form of a series, each term of which contains the analyzed experimental function. The expansion is carried out electrically with the aid of a bridge circuit, and the first four pairs of terms entering into the series are summed. The brief circuit consists of potentiometer drums with windings made of constantan wire

Card : 1/2

Abs Jour : Ref Zhur - Fizika, No 1, 1959, No 824

0.25 mm in diameter. A six-volt battery is used. The null instrument is a galvanometer with an internal resistance of 400 ohms and a sensitivity of 0.2×10^{-6} amp/division. The errors of the method are analyzed. The most important of these is connected with the incorrect rendering of the background line. The instrument accelerates the work by a factor of four to five times.

M. Umanskiy

CERMAK, J., inz. CSc.

Analysis of mutual radiation of parallel infinitely long cylinders (and comparison with the Poljakov method of tensioned thread). Stroj cas 15 no.6:509-521 '64.

1. Institute of Information Theory and Automation of the Czechoslovak Academy of Sciences, Prague.

CERMAK, Jaroslav, inz.

Building a prestressed concrete bridge over the Vltava River near Avikov by the cantilever method. Inz stavby 11 no.9:321-327 S '63.

1. Stavby silnic a zeleznic, n.p., Praha.

CERMAK, Jaroslav, inz.

Houses of Technology of the Czechoslovak Scientific and Technological Society. Podn org 18 no.5:193-194 My '64.

1. Deputy secretary of the organization, Central Council of the Czechoslovak Scientific Technological Society.

CERMAK, Jaroslav, inz.

Cooperation of workers in the development of science and technology in the Soviet Union. Podn org 18 no.9:401-403 S '64.

1. Central Council of the Czechoslovak Scientific and Technological Society.

621.395.64

1179. NEGATIVE-IMPEDANCE REPEATERS. J.Cermák. Slaboproudý Obzor, Vol. 16, No. 8, 394-403 (1955) 14 Czech.

This theoretical study deals with the principles and properties of negative-resistance repeaters and compares them with the standard-type telephone amplifier. The negative-impedance devices are either of parallel or series type, and can be employed for gains up to 1.2 N. In comparison with the standard repeaters they offer the following advantages: the simplicity of construction (no hybrid transformers) and non-interference with d.c. and dialling pulse paths. Both types of negative-impedance repeaters are analysed in detail and the feedback circuits suitable for realizing the desired impedance are shown. A parallel repeater having a gain 1.2 N and a bandwidth from 300 c/s to 3.4 kc/s is briefly described.

R.S.Sidorowicz

621.375.13 : 621.317.332.1 : 621.3.016.35

3114. MEASUREMENT OF THE STABILITY OF AMPLIFIERS BY MEANS OF THEIR INPUT IMPEDANCE. J.Cermák. Slaboproudý Obzor, Vol. 17, No. 1, 49-55 (1956). In Czech.

The input impedance and admittance of a generalized passive quadripole are given in terms of its network parameters. The expression is extended to feedback amplifiers, and it is shown that the feedback ratio, βA, where β is the feedback factor and A is the open-loop gain, is expressed as a ratio of two input impedances or admittances. The impedances (or admittances) are measured at a convenient point of the amplifier under the normal operating conditions and with the feedback loop interrupted. By exploring the impedances over the whole spectrum, it is possible to construct the Nyquist diagram of the system. The actual diagram of a wide-band (0.2 kc/s to 2 Mc/s) amplifier is given.

R.S.Sidorowicz

(ERMAK, J.)

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2331. TELEPHONE REPEATERS WITH NEGATIVE INPUT IMPEDANCE. J.Cermák. 621.395.64
Slaboproudý Obzor, Vol.17, No. 8, 422-5, No. 9, 489-94 (1956). In Czech

Insertion of a negative impedance either in series or in parallel with a telephone line results in an amplification of the transmitted signals. The dynatron-type negative impedance is suitable for the parallel connection, but it is normally avoided, since it distorts the signalling pulses. The arc-type impedance can be inserted in series by means of a transformer. The arc-type impedance can be realized by means of a feedback circuit consisting of two triodes, which are connected in a manner similar to that used in a scale-of-two circuit. The system is analysed in detail. It is shown that its practical value is rather limited, since it produces strong reflections along the line. The problem is solved by employing a bridged-T network (See Abstr. 129'/1955). The device consists of two inductive elements, a series impedance of the arc type and a dynatron-type parallel impedance. The circuit is capable of operating at gains up to 1.5 N.

R.S.Sidorowicz

CERMAK, J.

A vacuum-tube filter. p.50. (Sdelovaci Technika. Vol. 5, no. 2, Feb. 1957. Czechoslovakia)

SO: Monthly List of East European Accession (EEAL) LC, Vol. 6, no. 7, July 1957. Uncl.

5056. SIMPLE RESISTANCE HYBRID NETWORKS. J. Cermák. Slaboproudý Obzor, Vol. 18, No. 2, 83-6 (1957). In Czech.

The following network is analysed: a two-wire line of characteristic impedance Z_0, terminated (at the near end) with an impedance Z_2, has two resistances R_1 and R_2 in series with one of the conductors and is terminated with a balancing impedance Z_3; output from across R_1 and R_2 is taken to a line terminated with an impedance Z_4 (in receiving direction), and the output from the mid point between R_1 and R_2 and the second conductor of the line is taken to a line terminated with an impedance Z_5 (in transmission direction). Expressions for the attenuation between the line and the transmitter and the [illegible] attenuation are derived. These are [illegible] the unbalance parameter [illegible] $s = R_1/R_2$. It is shown that the line-to-[illegible] transmitter attenuations of a symmetrical hybrid [illegible] are 0.35 [illegible] higher than those of a hybrid coil. The [illegible] therefore be directly replaced by a resistive hybrid [illegible]

H.S. Sidorowicz

CERMAK JINDRICH

CZECHOSLOVAKIA/Electronics - Photocells and Semiconductor Devices H-8

Abs Jour : Ref Zhur - Fizika, No 3, 1958, No 6421

Author : Cermak Jindrich
Inst : Higher Institute for Telecommunication, Prague, Czechoslovakia
Title : Equivalent Circuit of Junction Transistor.

Orig Pub : Slaboproudy obzor, 1957, 18, No 5, 299-303

Abstract : Examination of the equivalent circuit of junction transistors for the transmission of weak signals at high frequencies. The equivalent circuit is calculated with account for the collector capacitance and of the reduction in the current gain. The suitability of the circuit for practical use is verified by measurements made on amplifier circuits. Certain recommendations are given concerning the problem of broadening the band of the amplified frequencies. Bibliography, 16 titles.

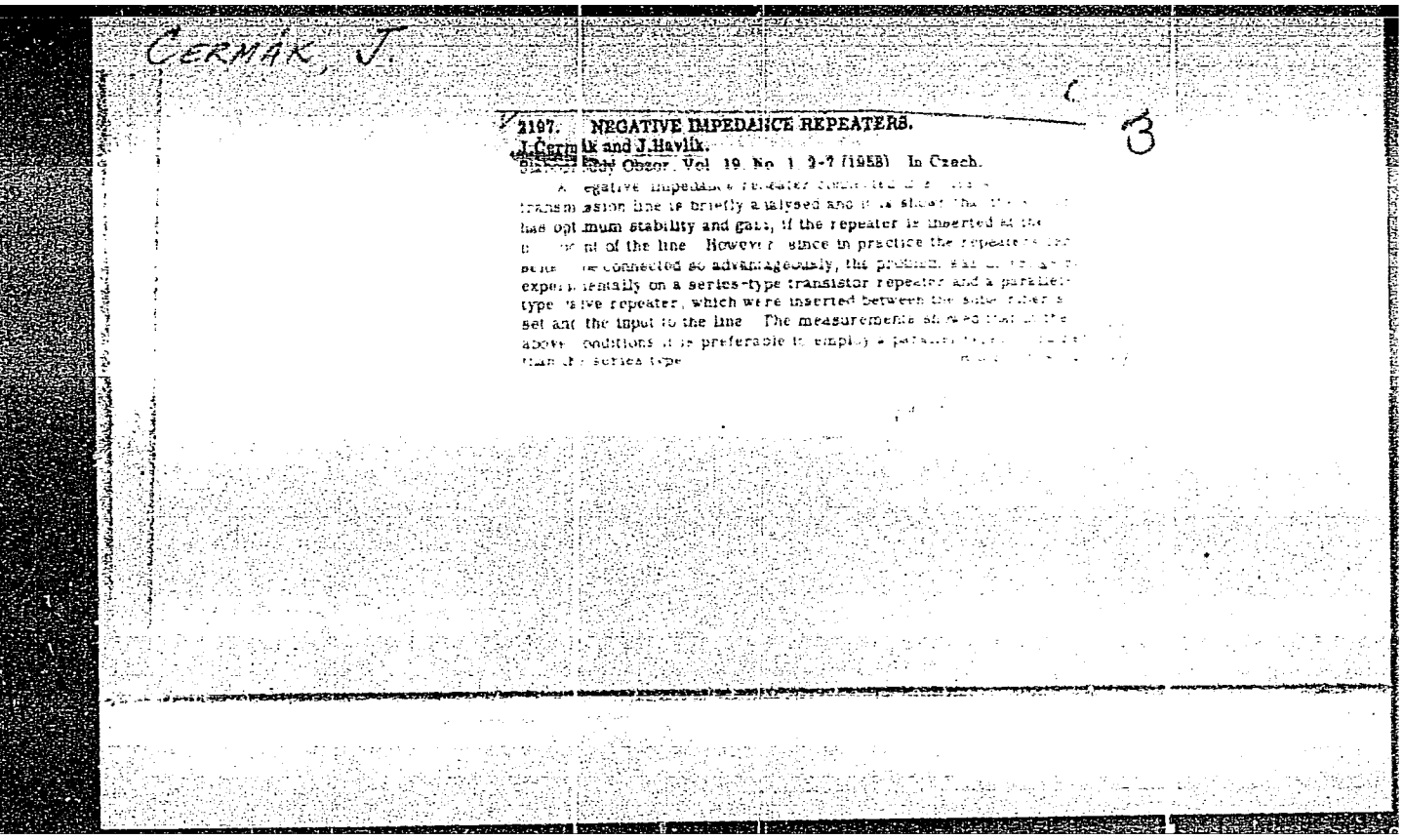
Card : 1/1

CERNAK, J.; HAVLIK, J.

A telephone repeater with negative impedance.

P. 7. (SDELOVACI TECHNIKA) (Praha, Czechoslovakia) Vol. 6, no. 1., Jan. 1958

SO: Monthly Index of East European Accession (EEAI) LC Vol. 7, No. 5, 1958



ČERMÁK, J.

2197. NEGATIVE IMPEDANCE REPEATERS.
J.Čermák and J.Havlík.
Slaboproud Obzor, Vol 19, No 1, 2-7 (1958) In Czech.

A negative impedance repeater connected in a transmission line is briefly analysed and it is shown that it has optimum stability and gain, if the repeater is inserted at the [illegible] of the line. However, since in practice the repeaters are [illegible] connected so advantageously, the problem was [illegible] experimentally on a series-type transistor repeater and a parallel-type active repeater, which were inserted between the subscriber's set and the input to the line. The measurements showed that under the above conditions it is preferable to employ a [illegible] than the series type.

CERMAK, J.

621.382

5936. TRANSISTOR NOISE. J.Čermák.
Slaboproudý Obzor, Vol. 19, No. 9, 426-33 (1958). In Czech.

Available sources on the subject are surveyed and it is pointed out that transistors exhibit two kinds of noise. At frequencies well below the transistor cut-off frequency, the noise spectrum decreases logarithmically with frequency; here the noise has the nature of the flicker effect. At higher frequencies, transistors produce white noise which can be attributed to: emitter current, cut-off collector current, partition effect and base resistance. Some measurements were carried out to determine the overall noise in several British, Czechoslovak and Soviet transistors. Curves of noise figure as a function of collector voltage, temperature and frequency are plotted. These seem to confirm results obtained by other investigators.

R.S.Sidorowicz

JW
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CERMAK, J.

"Internal feedback in transistors." p. 150.

SLABOPROUDY OBZOR. (MINISTERSTVO PRESNEHO STROJIRENSTVI, MINISTERSTVO SPOJU A VEDECKA TECHNICKA SPOLECNOST PRO ELEKTROTECHNIKU PRI CSAV.) Praha, Czechoslovakia, Vol. 20, no. 3, Mar. 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 9, September 1959. Uncl.

CERMAK, Jindrich, C.Sc.

The use of compandors in carrier telephony systems. Slaboproudy obzor 21 no.9:514-520 S '60. (EEAI 10:1)

1. Vyzkumny ustav telekomunikaci, Praha.
(Telephone)

CERMAK, Jindrich, inz.

Ten years of junction transistors. Slaboproudy obzor 21 no.9:554-556 S '60. (EEAI 10:1)
(Transistors)

CERMAK, Jindrich, inz.

Transmission of several programs over low frequency wire broadcasting.
Sdel tech 9 no.9:348 S '61.

CERMAK, Jindrich, inz.

"Technology of transistor switchgears" by Jaroslav Budinsky. Reviewed by Jindrich Cermak. Slaboproudy obzor 23 no.8:488 Ag '62.

CERMAK, Jindrich, inz.

Small diameter coaxial cables for carrier telephony systems.
Sdel tech 10 no.9:333-335 S '62.

CERMAK, Jindrich, inz.

Reliability of semiconductor components. Sdel tech 10 no.12:442-444 D '62.

CERMAK, Jindrich, inz.

"Transistors in theory and practice" by Holenda and Jurkovic. Reviewed by Jindrich Cermak. Sdel tech 10 no.10:398-399 O '62.

CERMAK, Jindrich, inz.

"Scientific literature on electronic semiconductor equipment; bibliography 1945-1955". Reviewed by Jindrich Cermak. Sdel tech 10 no.10: 399-400 O '62.

CERMAK, Jindrich, inz.

Impulse code modulation carrier telephone systems. Sdel tech 11 no.4:121-125 Ap '63.

CERMAK, Jindrich, inz.

High-frequency measurement of junction cables.
Sdel tech 11 no.7:242-245 Jl '63.

CERMAK, Jindrich, inz.

Design of a three-stage direct-coupled amplifier. Sdel tech 11 no.10:372-373 O '63.

CERMAK, Jindrich, inz.

"Calculation of low-frequency transistor amplifiers" by P.A. Popov. Reviewed by Jindrich Cermak. Slaboproudy obzor:Suppl.: Literatura 24 no.8:L57 '63.

CERMAK, Jindrich, inz., CSc.

Voltage and time quantization of signals. Slaboproudy obzor 24 no.10:563-570 O '63.

1. Vyzkumny ustav telekomunikaci, Praha.

CERMAK, Jindrich, inz.

Exponential oscillation generator. Sdel tech 12 no. 3:96 Mr '64.

CERMAK, J., inz.

Solution of the part production control in the Soviet Union.
Sdel tech 12 no. 3:111 Mr '64.

CERMAK, J. inz. CSc.; Zavorka, J., inz. CSc.

Evaluation of steam generator efficiency by digital computers. Strojirenstvi 14 no.4: 243-252 Ap '64

1. Institute of Information Theory and Automation, Czechoslovak Academy of Sciences, Prague.

L 34558-66

ACC NR: AP6025509 SOURCE CODE: CZ/0014/65/000/012/0442/0448

62

AUTHOR: Cermak, Jindrich (Engineer)

ORG: none

TITLE: Experimental multichannel apparatus using pulse code modulation

SOURCE: Sdelovaci technika, no. 12, 1965, 442-448

TOPIC TAGS: pulse code modulation, communication equipment, semiconductor research, circuit design

ABSTRACT: The article describes equipment developed at the Telecommunications Research Institute. Diagrams of the circuits are presented and discussed in detail. Laboratory tests have been conducted to determine the reliability of the semiconductors. The results of measurements are given. Orig. art. has: 20 figures, 5 formulas and 1 table. [JPRS: 34,691]

SUB CODE: 17, 09 / SUBM DATE: none / ORIG REF: 003 / SOV REF: 001
OTH REF: 009

CERMAK, Jindrich, inz.

Transmission of television video signal by pulse code modulation.
Sdel tech 13 no.1:25 Ja '65.

ČERMÁK, JIŘÍ

Čermák, Jiří. Über lineare Systeme von Differenzengleichungen mit periodischen Koeffizienten. Časopis Pěst. Mat. 79, 141–150 (1954). (Czech. Russian and German summaries)

The author generalizes some results of T. Fort [Finite differences and difference equations in the real domain, Oxford, 1948; MR 9, 514] on the behavior of the solutions of homogeneous linear difference equations of the second order with periodic coefficients to systems of difference equations of the same type. Given the system

$$u_i(x+1)=\sum_1^n p_{ij}(x)u_j(x) \quad (i=1,\cdots,n)$$

with the p_{ij} periodic of period ω, he first observes that the solutions form an n-dimensional vector space over the complex numbers, with a basis called the fundamental system of solutions. If the fundamental system is represented by the matrix $U(x)$, then $U(x+\omega)$ is also a fundamental system, and there is a constant regular matrix A such that $U(x+\omega)=U(x)A$. This matrix is unique up to similarity. Several of his results are expressed in terms of "Weyr characteristics" whose definition would take up

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Čermák, Jiří.

too much space. Two of those which are not so expressed are as follows: a necessary and sufficient condition that the above system should have nontrivial solutions of period ω is that the matrix A should have a characteristic root equal to unity; a sufficient solution that all the solutions belonging to a characteristic root a should approach zero as $x \to \infty$ is that the magnitude of a should be less than 1. He extends some of his results to systems of nonhomogeneous equations.

J. M. Danskin (Princeton, N.J.).

2/2

Cermak, J.

Professor Kaucky at sixty. P. 126
CASOPIS PRO PESTOVANI MATEMATIKY. (Ceskoslovenska akademie ved. Matematicky ustav) Praha
Vol. 81, no. 1, Apr. 1956

Source: EEAL - LC Vol. 5. No. 10 Oct. 1956

Čermák, Jiří. Bemerkung zum Grenzübergange von Differenzengleichungen in Differentialgleichungen. Časopis Pěst. Mat. 81 (1956), 224-228. Czech, Russian and German summaries)

Das System von Differenzengleichungen

$$\Delta_0 u_i(x)=\sum_{j=1}^{n} a_{ij}u_j(x),\quad \left(\Delta_\omega u_i(x)=\frac{u_i(x+\omega)-u_i(x)}{\omega}\right),$$

$$(i=1, 2, \cdots, n),$$

kann in Matrizenbezeichnung durch

$$(*)\qquad \Delta_0 u(x)=Au(x)$$

abgekürzt werden. Die Matrix A besteht dabei aus den komplexen konstanten Zahlen a_{ij}. Mit $\omega\to 0$ entsteht aus (*) die Matrizendifferentialgleichung

$$\frac{du}{dx}=Au(x),$$

also ein System von n linearen homogenen Differentialgleichungen erster Ordnung mit konstanten Koeffizienten für die n unbekannten Funktionen $u_i(x)$. Zu jedem Eigenwert a der Matrix A gehört dann eine Schar von Lösungen der Differenzengleichungen, die aus sovielen Lösungen besteht, wie die Vielfachheit dieses Eigenwertes angibt.

1/2

Cermak, Jiri,

Dabei erscheinen diese Lösungsvektoren $u_{\mu\nu}$ als gewisse Linearkombinationen der Eigenvektoren $a_{\mu\nu}$ der Matrix A. Durch den Grenzübergang $\alpha \to 0$ erhält Verfasser in Übereinstimmung mit gleichartigen Ergebnissen von O. Borůvka und A. Walther (zur Integrationstheorie linearer Differentialsysteme mit konstanten Koeffizienten) aus der Lösungsschar des Differenzensystems die Lösungsschar

$$u_{\mu\nu} = e^{\alpha x}\left\{a_{\mu\nu} + \frac{x}{1!}a_{\mu+1,\nu} + \frac{x^2}{2!}a_{\mu+2,\nu} + \cdots + \frac{x^{\nu-\mu}}{(\nu-\mu)!}a_{\nu\nu}\right\}$$

$$(1 \le \mu \le r,\ \nu = 1, 2, \ldots, \alpha_{r-\mu+1})$$

des Differentialsystems (*). Dabei sind die $\alpha_1, \alpha_2, \ldots, \alpha_{r-\mu+1}$ E. Weyr's charakteristische Zahlen, welche den Eigenwerte a der Matrix A entsprechen [cf. O. Borůvka, Časopis Pest. Mat. 79 (1954), 151–155; MR 16, 475; A. Walther, Math. Ann. 93 (1955), 257–276]. *M. Pinl.*

CERMAK, J.

"Lerch's contribution to the general theory of functions."

p. 419 (Prace) Vol. 29, no. 10/11, 1957.
Prague, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

CERMAK, J.

"Lerch's contribution to the theory of infinite series."

p. 433 (Prace) Vol. 29, no. 10/11, 1957.
Prague, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

21.1000

S/058/62/000/003/036/092
A061/A101

AUTHOR: Cermák, J.

TITLE: Neutron density distribution in the vicinity of a partly inserted black rod in two-group approximation

PERIODICAL: Referativnyy zhurnal, Fizika, no. 3, 1962, 55 - 56, abstract 3B450 ("Chekhosl. fiz. zh.", 1961, v. 311, no. 9, 652 - 659, English; Russian summary)

TEXT: An unreflected cylindrical reactor of finite height with an empty cylindrical channel in the center is considered. An absorbing rod, black for thermal and transparent for epithermal neutrons, is inserted to different depths of the channel. The boundary condition throughout the channel length is considered as some operator (K_1, K_2) affecting the neutron density function. It is assumed that the boundary conditions on the channel surface, on the spot where the absorbing rod terminates, vary discontinuously. The solution is written down as the sum of products of trigonometric functions (dependence on height) by some combinations of cylindrical functions, satisfying the boundary conditions on the external reactor surface. The operators K_1 and K_2 are represented using trigonometric func-

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Neutron density distribution in...

tions. The problem is then one of an infinite system of linear algebraic equations. By a reasonably limited number of equations it is possible to determine the neutron density distribution in the vicinity of the rod and its efficiency. A numerical example is given.

B. Kochurov

[Abstracter's note: Complete translation]

ČERMAK, Jiri, inz.

Silicons. Tech praca 15 no.3:214-218 Mr '63.

1. Vyzkumny ustav organickych syntez, Pardubice - Rybitvi.

CERMAK, Jiri; ZAVORKA, Jiri

Use of signal-flow graphs in the control technique. Automatizace 6 no.3:60-64 Mr '63.

1. Ustav teorie informace a automatizace, Praha.

CERMAK, Jiri, inz., CSc.

On the theorem of initial and final value of a function. Automatizace 6 no.9:223-224 S '63.

1. Ustav teorie informace a automatizace, Ceskoslovenska akademie ved.

CERMAK, Jiri; ZEZULA, Jaroslav

On the theory of cylindrical air holes in reactors. Jaderna energie 9 no.7:234 Jl '63.

1. Ustav jaderneho vyzkumu, Ceskoslovenska akademie ved, Rez u Prahy.

CZECHOSLOVAKIA

CERMAK, J; FRANC, J.

Research Institute of Organic Synthesis (Forschungsinstitut fuer organische Synthesen), Pardubice-Rybitvi (for both)

Prague, Collection of Czechoslovak Chemical Communications, No 10, 1965, pp 3278-3283

"On the Identification of Compounds from the Direct Synthesis of Methylchlorsilane."

PETERKA, V., inz. CSc.; CERMAK, J., inz. CSc.

Analytic expression of some relations between the thermodynamic parameters of wet steam and overheated steam. Strojirenstvi 14 no.5:351-354 My '64.

1. Institute of Information Theory and Automation, Czechoslovak Academy of Sciences, Prague.

LUCANSKY, A.; MATISKO,J.; Spolupracovali: CERMAK, J.; SNEZNY,L.; LESKO,V.; BIBOVA, A.

Clinical and laboratory research on the simultaneous administration of procaine and mesocaine. Rozhl. chir. 43 no.6:407 - 413 Je'64

1. Chirurgicke oddelenie OUNZ v Presove (veduci: MUDr. J. Brtka) a Ustredne laboratorium OUNZ v Presove (veduci: MUDr. J.Matisko).

CERMAK, J., dr., inz.

Phenol liquidation by the adsorption on flotation coal sludge.
Paliva 41 no.11:341-343 N '61.

1. Banske projekty, Ostrava.

CERNA, Jitka; CERNY, Lubomir; MESAROS, Ernest

Pathologicomorphological changes of swine gall bladder and their relation to microbial flora. Vet medicina 8 no.6:401-408 D '63.

1. Departments of Pathological Morphology and Microbiology of the Research Institute of Veterinary Medicine, Brno-Medlanky and Institute of Pathological Morphology of the Faculty of Veterinary Medicine of the Higher School of Agriculture, Brno-Medlanky. Head of the Institute: [doc. MVDr.] M.Zendulka.

HUDLER, Libor; JEDLICKA, Jiri; SIMEK, Jiri; CERMAK, Josef; PAZDERKA, Jaroslav.

Cylindrical rotating oxygenator. (Preliminary report). Sborn. ved. prac. lek. fak. Karlov. Univ. (Hrad. Kral.) 6 no. 3:239-244 '63.

1. Chirurgicka klinika (prednosta: prof., MUDr. J. Prochazka); Katedra velecne chirurgie VLVDU (prednosta: doc., MUDr. A. Benes) a Ustredni biochemicka laborator (prednosta MUDr. J. Jicha), Universita Karlova.

*

CERMAK, Josef, prof., inzh. dr. (Praha)

Remarks on the development of inside heat insulation of furnace walls under heavy stress. Stroj cas 14 no.5:406-425 '63.

CERMAK, Josef

Use of prefabricated reinforced concrete support elements as substitute for timber in making artificial roofs for stopes. Rudy 12 no.4:122-126 Ap '64.

1. Development Center, Central Administration of the Research and Mining of Radioactive Raw Materials.

CZECHOSLOVAKIA UDC 613.71(:612.766.1)-039.33/.34-0736.6

CERMAK, Jaroslav; Research Institute for Physical Education (Vyzkumny Ustav Telovychovny), Prague, Director (Reditel) Docent Dr E. EISELT.

"Efficiency of Intermittent Work Compared to Continuously Performed Work of the Same Volume."

Prague, Pracovni Lekarstvi, Vol 18, No 6 - 7, Aug 66, pp 279-282

Abstract /Author's English summary modified_7: Continuous work 100W/20 min 90 turns on a bicycle ergometer was compared to work performed at intervals: 200 W / 5 x 2 min. In athletes trained to perform with a sustained effort, higher efficiency was found in the intermittent work. Other athletes, performing normally for short periods of effort did not show this phenomenon. 1 Figure, 2 Tables, 8 Western, 2 Czech, 1 East German reference. (Manuscript received 3 Dec 65).

1/1

ČERMAK, K.

"The X-ray width of joint fissure on the leg of cattle." "The contribution to the treatment of anthrax". Inst. for Rentgenology & physical Therapy, Vet. Fac., U. of Zagreb.

Vet. Archiv. 22 : 241-244, 1952

YUGOSLAVIA

K. CEPNAK, F. SANKOVIC and N. ANDRASIC (Affiliation not stated).

"Umbilical Hernia in Colts."

Belgrade, Veterinarski Glasnik, Vol 16, No 12, 1962; pp 1183-1186.

Abstract [German summary modified]: Of 4266 horses seen 1956-1961, 92 had umbilical hernia; 52 were operated upon, with 44 successes and 8 recurrences. Comprehensive clinical and surgical data; 3 illustrations of technique; 6 Western and 1 Czech reference.

1/1

CZECHOSLOVAKIA

COUNTRY : Czechoslovakia H-3
CATEGORY :

ABS. JOUR. : RZKhim., No. 16 1959, No. 57378

AUTHOR : Cermak, K. and Hutla, V.
INST. : Not given
TITLE : The Registration of Column Head Temperatures

ORIG. PUB. : Chem Prumysl, 8, No 10, 523-525 (1958)

ABSTRACT : A resistance thermometer with amplifier and recording milliammeter has been used in measuring column head temperatures of laboratory distillation columns. The accuracy of the measurements was 0.1°.

Ye. Stefanovskiy

CARD: 1/1

CERMAK, K.

1/ Apparatus for measurement of electric conductivity of electrolyte solutions. Zdeněk Šolc and Karel Čermák (Vysoká škola chem. technol., Pardubice, Czech.). *Chem. listy* 53, 847–8(1959).—Through the use of Wagner's auxiliary bridge, good shielding, and grounding the described app. has a sensitivity of 2×10^{-5}%. L. J. Urbánek

84948

Z/037/60/000/006/001/010
E073/E535

26.1640

AUTHOR: Čermák, Karel

TITLE: Irreversible Change in the Electric Resistance of a Thin Tellurium Layer During Artificial Ageing

PERIODICAL: Československý časopis pro fysiku, 1960, No.6, pp.517-520

TEXT: Weale (Ref.1), Levinstein (Ref.2), Scott and Bennett (Ref.3), Bond (Ref.4), Preuss (Ref.5) and Mayer (Ref.6) studied the influence of tempering on the electric resistance of thin layers. Their results show that the electric resistance of thin metal layers is subjected to changes during the natural ageing or tempering and that these changes occur as a result of changes in the structure of the layer. Tempering may also lead to destruction of the layer. The authors studied the pronounced increase of the electrical resistance of thin tellurium layers in the temperature range 190°C. The structural changes occurring in such a case were investigated as a function of the resistance of a thin layer on the frequency of the current which passes through the layer. The measurements were carried out on 10 x 15 mm thin layer specimens of spectrally pure tellurium produced by vacuum evaporation on a glass base at room

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E073/E535

Irreversible Change in the Electric Resistance of a Thin Tellurium Layer During Artificial Ageing

temperature. The contacts were obtained by depositing a thicker layer of tellurium at the end of the specimen by repeated evaporation in vacuum and screening of the central part of the specimen. The current was fed in by means of mechanically clamped copper electrodes ensuring a good contact, as was ascertained by means of resistance measurements at low frequencies. The specimens were heated in an electric furnace. The d.c. resistance was measured by means of a resistance bridge, the a.c. resistance was measured by means of a loss angle meter RFT, type 193, in the frequency range 150 kc/s and 10 Mc/s. The changes in the d.c. resistance in most cases did not vary by more than 3% of the value at the beginning of the measurements. After terminating the measurements, the tellurium layer was evaporated and the conductivity of the glass base measured; this was found to be negligible compared to the conductivity of the layer. The results obtained for three heating cycles and also the results of the frequency measurements before and after the first heating cycle and after the third heating cycle are given. Analysis of the measured electric resistance as a function of the frequency

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8498

Z/037/60/000/006/001/010
E073/E535

Irreversible Change in the Electric Resistance of a Thin Tellurium Layer During Artificial Ageing

shows than an irreversible change of the resistance occurs at about 190 °C and this is caused by breaks in the cohesion of the individual amorphous regions and also by cracks that form in the layer due to its destruction. The resistance of the amorphous regions increases irreversibly and so does the DC resistance of the thin layer. There are 2 figures and 14 references: 2 German and 12 English.

ASSOCIATION: Katedra matematiky a fysiky, Vysoká škola chemickotechnologická, Pardubice
(Chair of Mathematics and Physics, Chemical-technology University, Pardubice)

SUBMITTED: March 9, 1960

Card 3/3

23071

Z/037/61/000/002/003/003
E133/E435

26.2421 9.4300 (1164, 1385)

AUTHORS: Čermák, K. and Horák, J.

TITLE: Photovoltaic Effect on a Thin Film of Cadmium Telluride

PERIODICAL: Československý časopis pro fysiku, 1961, No.2, pp.141-148

TEXT: The photovoltaic effect of cadmium telluride has recently aroused interest because of the possibility of its use in solar batteries. Various authors reported measurements of the photovoltaic effect between cadmium telluride and various thin surface layers. The present authors studied the photovoltaic effect of thin films of p-type cadmium telluride evaporated onto a metallic substrate. The cadmium telluride was evaporated onto a layer of either tellurium or aluminium and the second contact was formed by metallic cadmium. The cadmium telluride contained less than 0.001% of Cu, Pb and Si. The evaporation was carried out at room temperature at 10^{-5} mm Hg. The area of the layers was about 0.5 or 1 cm^2 and the thickness 0.6μ and 0.2 μ. The resistivity of the layer was approximately 10^8 ohm cm. Three samples were used for the measurements: a) Te-CdTe-Cd (smaller resistance); b) Te-CdTe-Cd (larger resistance); c) Al-CdTe-Cd.

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Photovoltaic Effect ...

All the cells showed non-linear d.c. characteristics both in the dark and under illumination. The maximum resistance occurs when the cadmium contact is positive. This is in agreement with the assumption of a p-type layer of CdTe which is also in agreement with the thermoelectric and photoelectric e.m.f.'s. The samples were highly unstable. From a.c. measurements of the resistance and capacity, it seems established that a barrier layer of the Schottky type exists in the cells. The internal resistance found from measurements of the photoelectric e.m.f. was 4.65×10^4 ohm for sample (a). The photoelectric current has been found linearly proportional to the absorbed radiative energy within the full spectral range. The photovoltaic e.m.f. increases linearly with absorbed energy up to about 10 mV but shows a tendency to saturate at higher energies. Samples studied by the present authors did not show a maximum in their photosensitivity within the range of the wavelengths investigated, while commercial CdTe cells do show a maximum within this range. There are 7 figures and 11 references: 3 Soviet-bloc and 8 non-Soviet-bloc.

Card 2/3

23071

Z/037/61/000/002/003/003
E133/E435

Photovoltaic Effect ...

ASSOCIATION: Katedra fysiky, katedra anorganické chemie, Vysoká škola chemicko-technologická, Pardubice (Chair of Physics, Chair of Inorganic Chemistry, School of Chemical Technology, Pardubice)

SUBMITTED: July 29, 1960

Card 3/3

CERMAK, K.; SOLC, Zdenek

A simple device for measuring the thickness of thin films. Jemna mech opt 6 no.11:344 N '61.

1. Vysoka skola chemicko-technologicka, Pardubice.

3h693
Z/037/62/000/001/007/007
E073/E535

24,7700 (1160, 1164, 1385)

AUTHOR: Čermák, K.

TITLE: Diffusion of silver in a thin cadmium telluride film

PERIODICAL: Československý časopis pro fysiku, no.1, 1962, 84-85 + 1 plate

TEXT: To elucidate the cause of formation of an ohmic contact of silver with cadmium telluride, the diffusion of silver into thin layers of cadmium telluride was studied. The specimens on which the measurements were carried out were produced by vacuum deposition of a thin film of silver at the ends of a glass base and, following that, depositing at a vacuum of 10^{-4} mm Hg a thin layer of cadmium telluride. The thus produced specimens had a p-type conductivity. At the spots where the deposited thin cadmium telluride layer covers the silver layer diffusion of silver into the cadmium telluride may occur, both at elevated and at normal temperatures. The result of diffusion is a visible change in the absorption of light if the layer is transparent or there is a change in the thickness of the layer, which can be determined from the shift of the interference rings in

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monochromatic light. Diffusion of silver into the thin cadmium telluride layer causes an increase in the thickness of the layer, which is probably due to an expansion of the crystal lattice. This may damage or completely destroy the layer at the points of contact, i.e. at points where the silver layer is covered by a layer of cadmium telluride. "Jumps" in the interference rings indicate that the "diffusion front" proceeds from the two contacts to the middle of the layer. The diffusion depth y was found to be proportional to the square root of the diffusion time t and it can be expressed by the equation of C. Wagner (Ref.2: Handbuch d. Metallphysik, Leipzig 1940)

$$y^2 = 2Dt,$$

D being the diffusion coefficient. The temperature dependence of D can be expressed by

$$D = D_o \exp\left(-\frac{Q}{RT}\right)$$

where Q is the activation energy of the diffusion, R is a gas constant. Previous measurements showed that D_o is about 10^6 - 10^7 cm^2/day and Q is about $1.4 \cdot 10^4$ cal/mol. More detailed measurements are being made on the progress of diffusion and on the electric resistance, the structure and the photoelectric conductivity after diffusion, on thin films of these and other tellurides and selenides for which similar phenomena are to be anticipated. There are 2 figures and 2 references: both non-Soviet-bloc. The English-language reference reads as follows:
Ref.1: Nobel D.: Philips Res.Repts 15 (1959), 361.

ASSOCIATION: Katedra fysiky VŠCHT, Pardubice
(Physics Chair, VŠCHT, Pardubice)

SUBMITTED: June 14, 1961

[Abstractor's Note: Abridged translation.]

LASEK, Jiri, inz.; CERMAK, Karel, PhMr.

Chemical analysis of ZnCdSb alloys. Hut listy 17 no.10:735-738 O '62.

1. Ustav fyziky pevnych latek, Ceskoslovenska akademie ved, Praha.

CERMAK, Karel

Index of refraction of cadmium telluride. Sbor VSChT Pardubice Pt.2:37-39 '63.

Diffusion of silver in the thin layer of tellurium. Ibid.:41-47

1. Chair of Physics, Higher School of Chemical Technology, Pardubice.

L 8530-66 EWT(1)/EWP(t)/EWP(b) IJP(c) JD/AT

ACCESSION NR: AP5018476 CZ/0055/65/015/007/0536/0538

44,55 44,55

AUTHOR: Horak, J.; Cermak, K.

58
55
B

TITLE: Preparation and photoelectric properties of bismuth sulfidiode

SOURCE: Chekhoslovatskiy fizicheskiy zhurnal, v. 15, no. 7, 1965, 535-538

21, 44, 55

TOPIC TAGS: bismuth compound, photoelectric property, spectral distribution, crystal imperfection, thermoelectric power, crystal lattice structure

ABSTRACT: The article deals with preparation of BiSI crystals, which exhibit semiconductor properties, and with the spectral distribution of their photoeffect. Needle-like crystals 4 - 12 mm long were synthesized from pure bismuth, sulfur, and iodine in a quartz ampoule in pure nitrogen at 0.2 mm Hg and 430 ± 20C. The compound was found to be orthorhombic and belonging to the space group D_{2h}^{16}. The samples contained traces of less than 10^{-3}% Ca, Cu, Si, Se, Mg, and Al. The photoelectric current was measured as a function of the wavelength with a Zeiss monochromator and a stabilized tungsten-lamp source. The spectral distribution of the internal photoeffect for two different crystals obtained from the same batch is shown in Fig. 1 of the Enclosure. An important feature is that the difference in

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ACCESSION NR: AP5018476

3

the intensity at the maximum not only varies from crystal to crystal but varies in the same crystal if the photocurrent is turned on and off at different places of the crystal. The wavelengths of the maxima do not change, but the ratio of the heights changes appreciably. A photovoltaic effect was observed in almost all the prepared crystals. The spectral distribution showed two distinct maxima at 700 and 790 nm and an indication of the maximum near 660 nm. The existence of a photovoltaic volume effect gives evidence of certain non-uniformity of the crystal. Preliminary measurements indicate that the changes in the heights of the maxima are connected with the anisotropy of the BiSI orthorhombic crystals. The location of the maxima (785 nm) is in good agreement with measurements by others. From the polarity of the thermoelectric power it is deduced that the crystal has n-type conductivity along the c-axis. Heat treatment in an inert atmosphere up to 200C increases the electric conductivity without any change in the structure of the crystals. Orig. art. has: 2 figures.

44,55

ASSOCIATION: Institute of Chemical Technology, Pardubice, Czechoslovakia

SUBMITTED: 08Mar65 ENC: 01 SUB CODE: SS

NR REF SOV: 000 OTHER 005

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L 8530-66
ACCESSION NR: AP5018476 ENCLOSURE: 01

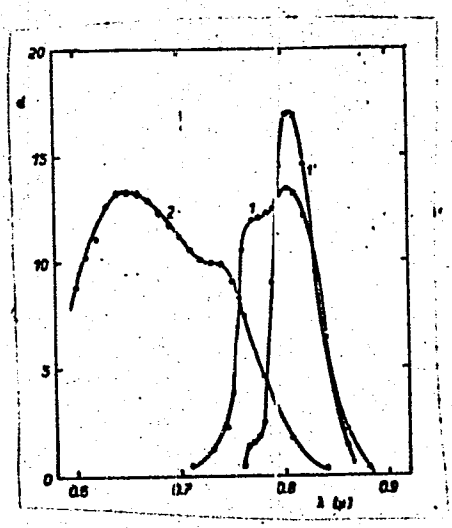

Fig. 1. Spectral distribution of photo-conductivity effect of BiSI crystals, sample: 1 and 2. Curve 1 sample 1, curve 1' sample 1 when crystal is turned round c-axis. Polarizing stress 82 V, frequency 445 cps, room temperature. Signal d in parts of scale.

Card 3/3

L 23145-66 EWP(t) IJP(c) JD

ACC NR: AP6010707 SOURCE CODE: CZ/0034/65/000/004/0287/0287

AUTHOR: Cermak, Karel (Pharmacist)

Institute of Physics of Solids, CSAV, Prague (Ustav fyziky pevnych latek, CSAV)

TITLE: Chemical analysis of solid solutions ZnSb + CdSb alloyed with indium

SOURCE: Hutnicke listy, no. 4, 1965, 287

TOPIC TAGS: metal chemical analysis, solid solution, indium alloy, zinc, cadmium, antimony, chelate compound, cyanide, formaldehyde, bromate, titrimetry

ABSTRACT: Analysis of ZnSb + CdSb alloys containing about 0.5% of In is discussed. Sb is distilled out as a bromide, Zn and In are separated from Cd in an ion exchanger. In is determined chelatometrically in an ammoniated tartaric acid medium, where Zn is inactivated by cyanide. Zn is determined after the cyanide action has been removed by formaldehyde. Sb is determined from a separate sample by bromate titration. Orig. art. has: 1 table. [JPRS]

SUB CODE: 07, 11 / SUBM DATE: none / ORIG REF: 003 / OTH REF: 001

Card 1/1 UDC

L 34727-66 EWT(m)/ETI IJP(c) JD
ACC NR: AP6025208 SOURCE CODE: CZ/0008/66/000/002/0247/0249

29

AUTHOR: Hruby, Arnost; Cermak, Karel; Mikulas, Miroslav B

ORG: Institute of Physics of Solids, CSAV, Prague (Ustav fysiky pevnych latek CSAV)

TITLE: Preparation of pure cadmium

SOURCE: Chemicke listy, no. 2, 1966, 247-249

TOPIC TAGS: cadmium, metal purification, chemical precipitation, vacuum distillation, semiconducting material

ABSTRACT: The authors suggest a method for further purification of Cd of a purity 99.999% which is used in the preparation of semiconductors. The method is based on precipitation of various impurities from a solution of Cd sulfate. Some metals are precipitated by electrical current, and others by reagents. The purified product is distilled under vacuum. The purity of the product was about 99.9999%. Orig. art. has: 1 table. [JPRS: 35,397]

SUB CODE: 11, 07, 20 / SUBM DATE: 22Dec64 / ORIG REF: 004 / SOV REF: 001
OTH REF: 002

Card 1/1

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